CIRM Bridges Science Master's Program

Grant Award Details

CIRM Bridges Science Master's Program

Grant Type: Bridges

Grant Number: EDUC2-12693

Project Objective: This program provides stem cell training for up to 10 Master's students per year for 5 years at San Francisco State University, and also from California State University systemwide and from local community colleges. Training includes coursework, outreach activities, and a 12 month research internship in stem cell and gene therapy science at local research institutions and companies.

Investigator:

Name:	Lily Chen
Institution:	San Francisco State University
Type:	PI

Award Value: $3,606,500

Status: Active

Grant Application Details

Application Title: CIRM Bridges Science Master's Program

Public Abstract: Situated in the epicenter of biotechnology and stem cell research, our university is ideally suited to house the proposed CIRM Bridges 2.0 program, which will contribute to the growth of an important sector of the local economy and the life science workforce. Our university is known for its academic excellence, equity, and efforts as a propeller for regional mobility and thriving economics. Our students, alumni, and faculty members contributed to the economic, civic, cultural and fiscal fabric of the San Francisco Bay Area. Our CIRM Bridges-to-stem cell training programs have operated as passageways for many first-generation students and students from underrepresented groups sending them to academic research institutes, Ph.D. and medical schools, pharmaceutic, cell therapy and startup biotech sectors. By capitalizing on the extensive and productive collaboration with our academic and industry partners, and the robust student training practices already instituted at our university, we are applying to relaunch the Bridges 2.0 training program under Proposition 14 to continue to train talented, diverse and motivated students for successful career paths to become future leaders in the biomedical workforce. The comprehensive curricular revision will augment the research skill proficiency of the participating students preparing them to develop a life-long appreciation for the importance of diversity, equity and inclusion. Our Bridges Science Master's Program is designed to prepare competent and committed professionals for both academia and industry to accelerate the discovery, development and delivery of stem cell, gene therapy and related technologies for improving human health. The program provides course work in STEM, business, and research practices, and is tailored to students interested in pursuing leadership positions in the biotechnology sector or advanced academic training programs. The new Bridges trainees will have the opportunities of enrolling in courses that prepare them for career paths of their professional interest. Examples of such student-centered career paths include: biotechnology and management, data science, science education and communication, or cellular science and neuroscience. In the first year of the program, students will take core courses at home campus to build a strong foundation in stem cell science. A subsequent 12-month internship research training program at one of our host institutions or affiliated stem cell companies across the Bay Area, funded by the CIRM fellowships, will provide the trainees extensive skills in stem cells and/or gene therapy. By the end of their training, the Bridges trainees will complete a master project report written in the form of a journal manuscript and pass an oral defense to enter the workforce or advanced graduate programs with the competencies that are essential to master the challenges awaiting life science professionals in the 21st century.

Statement of Benefit to California:	Our university is a primarily undergraduate and Hispanic serving institutions and a vibrant university of engagement, opportunity and scholarly activity offering its students outstanding opportunities for hands-on learning and discovery. It is one of the nation's most ethnically and culturally diverse campuses impacting student success and scientific discoveries through the collective efforts of faculty members, students, and collaborators, including our premier training partners. A Bridges award will offer outstanding training opportunities for a student population that is 43% BIPoC (Black, Indigenous & People of Color); 55% female, 32% First-Generation s; 30% economically disadvantaged with 66% receiving financial aid; pre-Pandemic, 49% of the students reported food insecurities. By bringing together faculty members and researchers across the campus and community, the CIRM Bridges program will open new opportunities for collaboration, promote the implementation of innovative interdisciplinary curricula, increase research productivity of faculty members and students, and expand into other STEM areas in California. By integrating rigorous scientific coursework with business training and industry research practices, our training program housed in the Department of Biology provides trainees broad skillsets needed for success in applied bioscience careers. The proposed program is designed to increase diversity in the California workforce by increasing the participation of students from disadvantaged backgrounds and to prepare all participants for success in an increasingly diverse workplace. The trainees will be enrolled in the Master of Science degree program in Biomedical Science with Concentration in Stem Cell Science (Bridges Science Master's Program) to prepare competent and committed professionals for both academia and industry to accelerate the discovery, development and delivery of stem cell, gene therapy, and related technologies for improving human health. The program provides additional course work in business and is tailored toward students interested in pursuing careers in the biotechnology sector or advanced academic training programs. Students graduating from the program will emerge with life science competencies. The outcome and impact of the renewal program will be substantial, transformative and long-lasting. Long-term, it will contribute to the diversification of the research and scientific workforce, as it supports underrepresented groups and disadvantaged students in the biological sciences, providing a solid foundation for students to launch their careers, and to nurture the development of both formal and informal support networks crucial for academic success and career advancement. This program will augment partnerships between our university and other academic institutions and the private biotech sector to increase biomedical workforce talents and catalyze California economy.

Source URL: https://www.cirm.ca.gov/our-progress/awards/cirm-bridges-science-master%E2%80%99s-program